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MATRIC NUMBER: 18/MHS06/053

DEPARTMENT: MEDICAL LABORATORY SCIENCE

LEVEL:200

COURSE: BCH 204

1. What are coenzymes.
2. Differentiate between fat and water soluble vitamins.
3. Describe niacin in relation to its coenzymic function.

**ANSWER**

1. Coenzymes are cofactors that are loosely bound to the enzyme. They are organic in nature. It is an organic non-protein compound that binds with an enzyme to catalyze a reaction.
2. The differences between fat and water soluble vitamins are;

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| **FAT SOLUBLE VITAMINS** | **WATER SOLUBLE VITAMINS** |
| They are soluble in fat | They are soluble in water |
| Carrier proteins are present | Carrier proteins are absent |
| They are stored in the liver | They have no storage |
| Deficiency manifests only when stores are depleted | Deficiency manifests rapidly as there is no storage |
| Absorption occurs along with lipids and requires bile salt | Absorption is simple |

1. Niacin, a water soluble vitamin can be found in two forms which are nicotinic acid and nicotinamide. These substances are used by the body to form the coenzymes NAD and NADP. These coenzymes degrade carbohydrates, fats, proteins and alcohols and synthesize fatty acids and cholesterol. They play a role in cell signaling.